

LG Vacuum Magnetic Contactor



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VACUUM MAGNETIC CONTACTOR



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Table 2.

Installing method		Fixed Type (Z)								Drawout Type (D)								Combination switch (G)							
Item	Type	LVC-3 42(E/L)C	LVC-6 42(E/L)C	LVC-3 44(E/L)C	LVC-6 44(E/L)C	LVC-3 42(E/L)C	LVC-6 42(E/L)C	LVC-3 44(E/L)C	LVC-6 44(E/L)C	LVC-3 42(E/L)C	LVC-6 42(E/L)C	LVC-3 44(E/L)C	LVC-6 44(E/L)C	LVC-3 42(E/L)C	LVC-6 42(E/L)C	LVC-3 44(E/L)C	LVC-6 44(E/L)C	LVC-3 42(E/L)C	LVC-6 42(E/L)C	LVC-3 44(E/L)C	LVC-6 44(E/L)C	LVC-3 42(E/L)C	LVC-6 42(E/L)C	LVC-3 44(E/L)C	LVC-6 44(E/L)C
Rated working voltage (kV)		3.3	6.6	3.3	6.6	3.3	6.6	3.3	6.6	3.3	6.6	3.3	6.6	3.3	6.6	3.3	6.6	3.3	6.6	3.3	6.6	3.3	6.6	3.3	6.6
Rated insulation voltage (kV)		3.6	7.2	3.6	7.2	3.6	7.2	3.6	7.2	3.6	7.2	3.6	7.2	3.6	7.2	3.6	7.2	3.6	7.2	3.6	7.2	3.6	7.2	3.6	7.2
Rated current (A)		200		400		200		400		200		400		200		400		200		400		200		400	
Short circuit interrupting current (kA)		4																4(40 with fuse)							
Switching capacity		AC3																							
Rated frequency (Hz)		60																							
Operating system		E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L
Mechanical life (ten thousand)		100	30	100	30	100	30	100	30	100	30	100	30	100	30	100	30	100	30	100	30	100	30	100	30
control voltage (V)		DC110V, AC110V, AC220V																							
Auxiliary contact		3a3b	2a2b	3a3b	2a2b	3a3b	2a2b	3a3b	2a2b	2a2b															
Maximum Capacity	Motor (kW)	750	1,500	1,500	3,000	750	1,500	1,500	3,000	750	1,500	1,500	3,000	750	1,500	1,500	3,000	750	1,500	1,500	3,000	750	1,500	1,500	3,000
	Transformer(kVA)	1,000	2,000	2,000	4,000	1,000	2,000	2,000	4,000	1,000	2,000	2,000	4,000	1,000	2,000	2,000	4,000	1,000	2,000	2,000	4,000	1,000	2,000	2,000	4,000
	Condenser (kVA)	750	1,500	1,200	2,000	750	1,500	1,200	2,000	750	1,500	1,200	2,000	750	1,500	1,200	2,000	750	1,500	1,200	2,000	750	1,500	1,200	2,000
Applicable fuse link		—								—								G5—G200 M20—M200				G300 G400 M300 M400			
Weight (kgf)		18.5	20	20.5	22	18.5	20	20.5	22	31.5	33	33.5	35	31.5	33	33.5	35	31.5	33	33.5	35	31.5	33	33.5	35

* Relevant standards IEC pub. 470, JEM1167

NORMAL SERVICE CONDITION

The Z, D, G Type electromagnetic contactor has been manufactured in accordance with IEC pub. 470 and is required to be used under the condition specified in Table 3 below.

Table 3.

The condition under general operation (IEC pub. 470 abstracted)		
Altitude		below 1000 m
Ambient temperature	Maximum	40°C
	Minimum	-5°C
	Average of 24 h	below 35°C
Relative humidity		below 50 % at 40°C (note 1)

Note 1. The relative humidity does not exceed 50 % at maximum temperature of 40°C. Higher relative humidities may be permitted at lower temperatures e. g. 90 % at 20°C. Care should be taken of moderate condensation which may occasionally occur due to variations in temperature.

It is assumed that appropriate means are taken to avoid condensation in the equipment accommodating the contactor.

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CONTROL CIRCUIT

Control circuit for Types Z, D and G differ depending on whether power is AC or DC, and whether energization is continuous or instantaneous (latch). The standard control circuit diagrams are given in Tables 5 and 6. The following points shall be noted carefully when operating the control circuit.

- (a) The continuously energized AC system shall be interrupted at DC side only.
If not, troubles such as slowed down interrupting speed and reduced interrupting capacity will occur.

- (b) The instantaneously energized AC system of Type Z, D and G provides a circuit to discharge the capacitor when the contactor is withdrawn. The switching on circuit also has an electrical interlock consisting of a microswitch which is actuated by the interlock lever.
(c) Simultaneous operations of switching off and on shall be avoided.
(d) Table 4 shows control currents in the typical control system.

Table 4. Standard Control Circuits Ratings.

Type	Control System	Power Source	Control Voltage (V)	Standard Circuit Number (Table 5, 6)	Closing Current (A)	Tripping Current (A)	Holding Current (A)
Z	Continuously energized "E"	DC	100/110	1B, 5B	1.6	—	0.5
			200/220		0.8	—	0.25
		AC	100/110	2B, 6B	1.6	—	0.5
			220/220		0.8	—	0.25
D	Instantaneously energized "L"	DC	100/110	3B, 7B	2.2	3	—
			220/220		1.7	1.5	—
		AC	100/110	4B 8B	2.2	3	—
			220/220		1.7	1.5	—

Table 5. Control Systems Diagrams for Type Z

Number	1B
Control System	Continuously Energized DC
Control Circuit "E _J "	
Remarks	1. Standard DC 110V 2. External auxiliary contacts 3a+3b

Number	3B
Control System	Continuously Energized DC
Control Circuit "L _J "	
Remarks	1. Standard DC 110V 2. External auxiliary contacts 2a+2b 3. Mechanical manual trip possible.

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Number	2B
Control System	Continuously Energized AC
Control Circuit	
Remarks	1. Switching on and off command on DC side only. 2. On and off switching relays should have contact capacity larger than Gold Star SRX-4D

Number	4B
Control System	Instantaneously Energized AC
Control Circuit	
Remarks	1. External auxiliary contacts 2a+2b 2. Mechanical manual trip possible. 3. Trip within 10 minutes after loss of power.

Table 6. Control Systems Diagrams for Type D and G

Number	5B
Control System	Continuously Energized DC
Control Circuit	
Remarks	1. Standard DC 110V

Number	7B
Control System	Instantaneously Energized DC
Control Circuit	
Remarks	1. Standard DC 110V 2. Mechanical manual trip possible.

Number	6B
Control System	Continuously Energized AC
Control Circuit	
Remarks	1. Switching on and off command on DC side only. 2. On and off switching relays should have contact capacity larger than Gold Star SRX-4D

Number	8B
Control System	Instantaneously Energized AC
Control Circuit	
Remarks	1. Mechanical manual trip possible. 2. Trip within 10 minutes after loss of power.

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DIMENSIONS

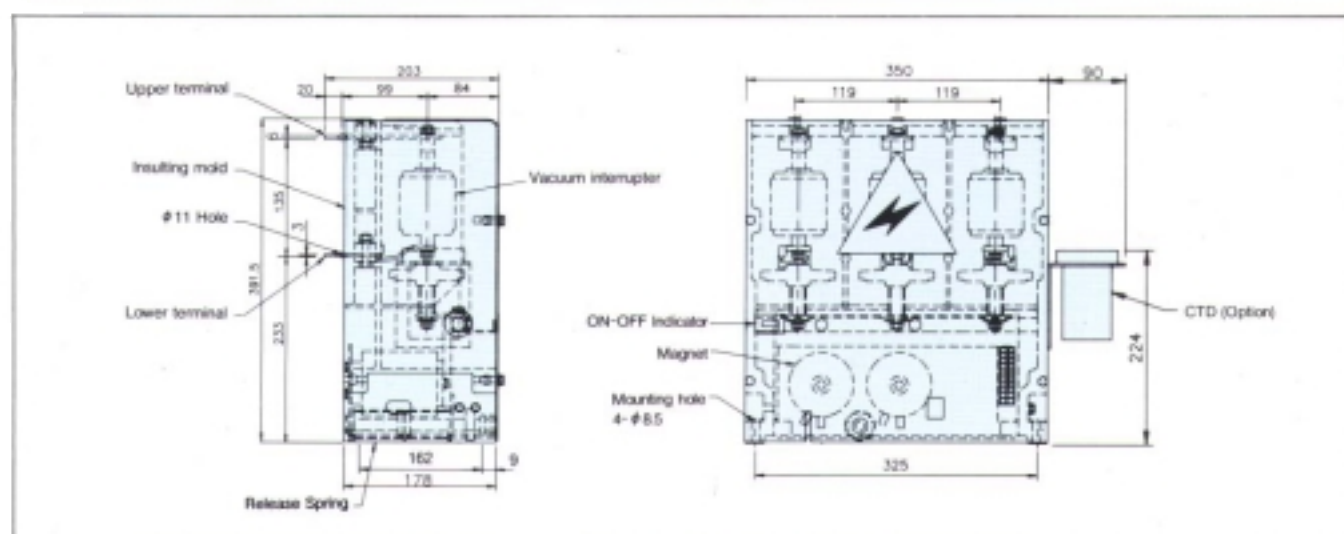


Fig 1. LVC-(3/6)-42(E/L)C Fixed Type (in mm)

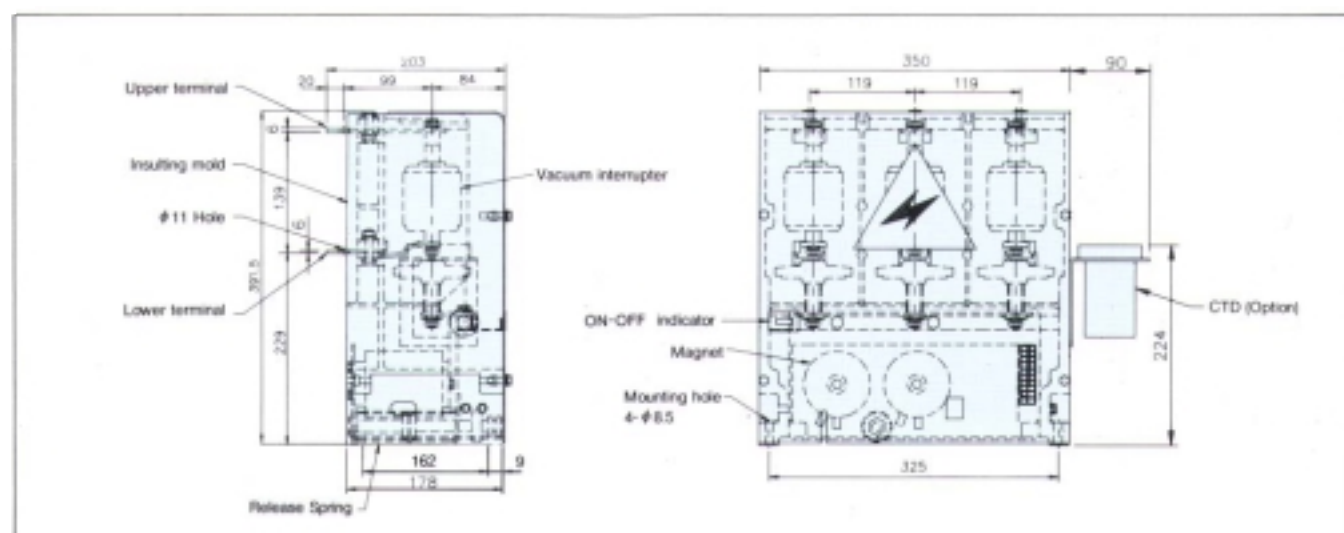


Fig 2. LVC-(3/6)-44(E/L)C Fixed Type (in mm)

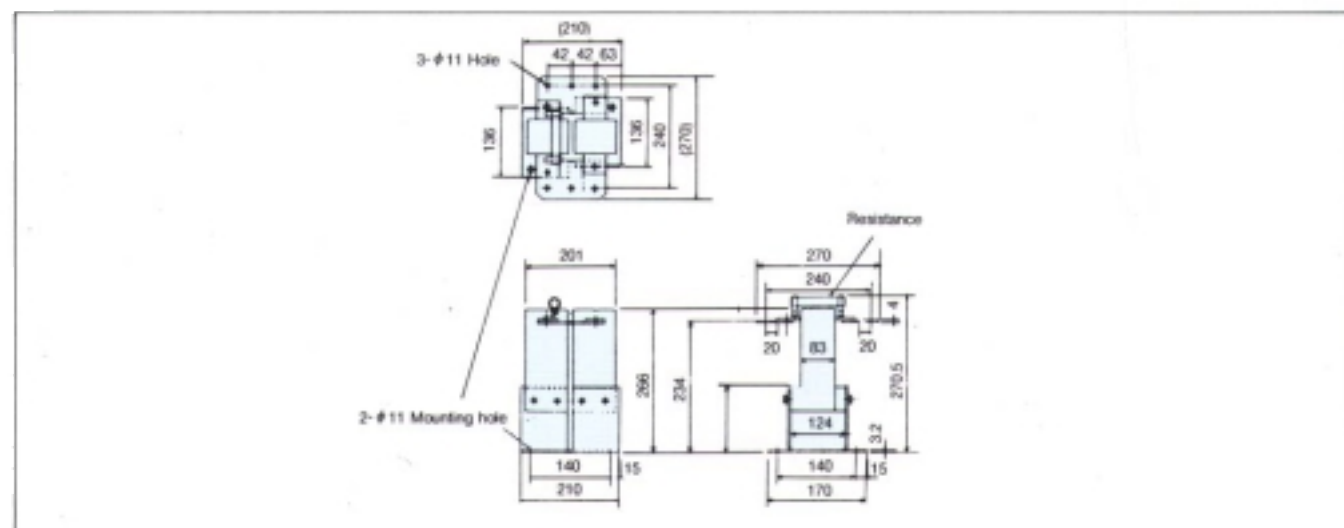


Fig 3. Type M4G VS reactor (for 400A) (in mm)

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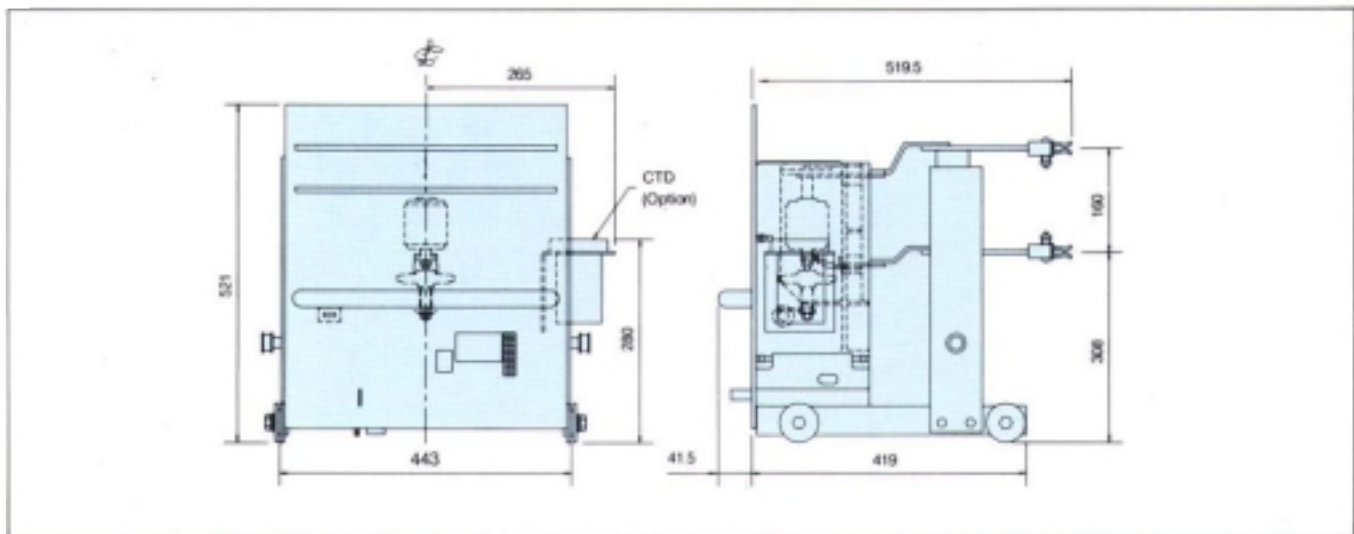


Fig 4. LVC-(3/6)-(42/44) (E/L)C Drawout Type (in mm)

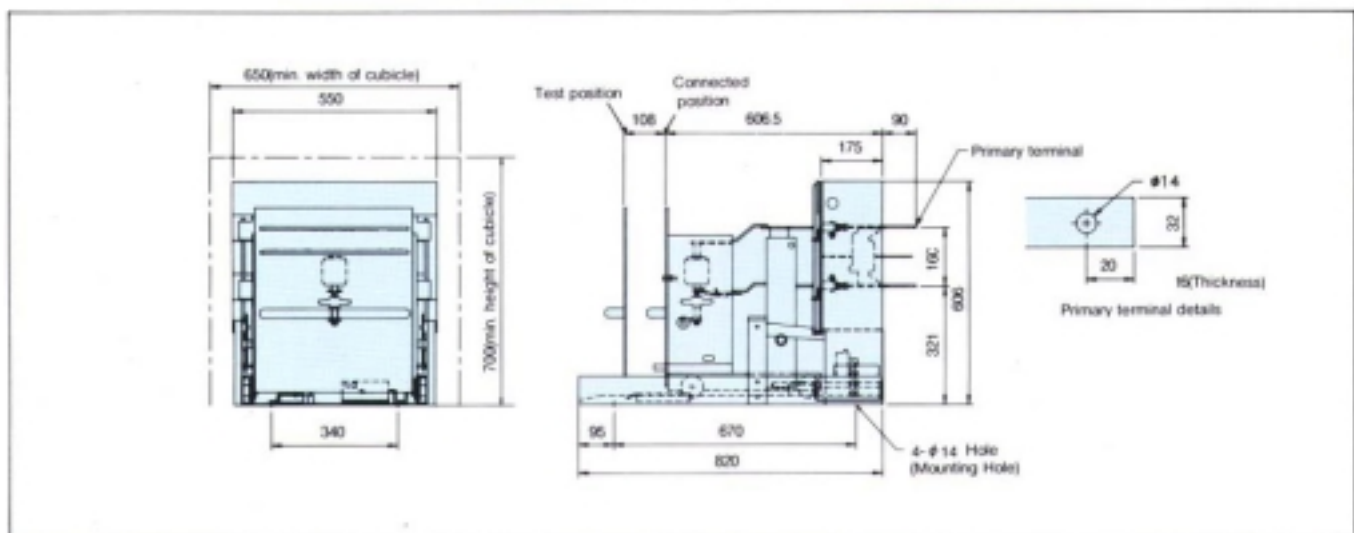


Fig 5. LVC-(3/6)-(42/44) (E/L)C Drawout Type Class E skeleton frame (in mm)

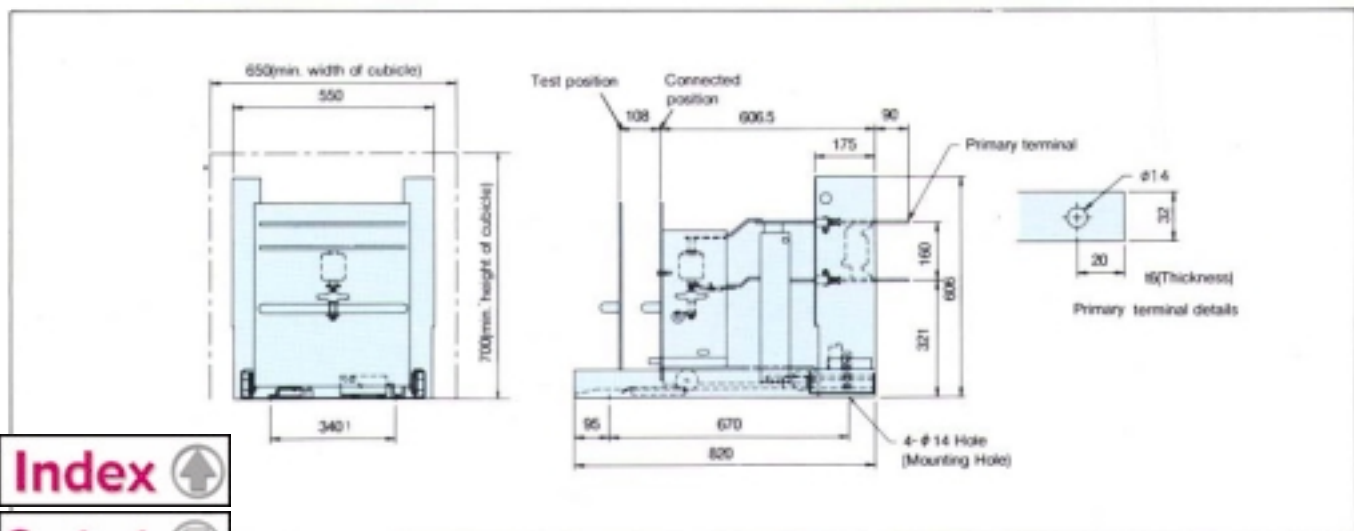


Fig 6. LVC-(3/6)-(42/44) (E/L)C Drawout Type Class F₂ skeleton frame (in mm)

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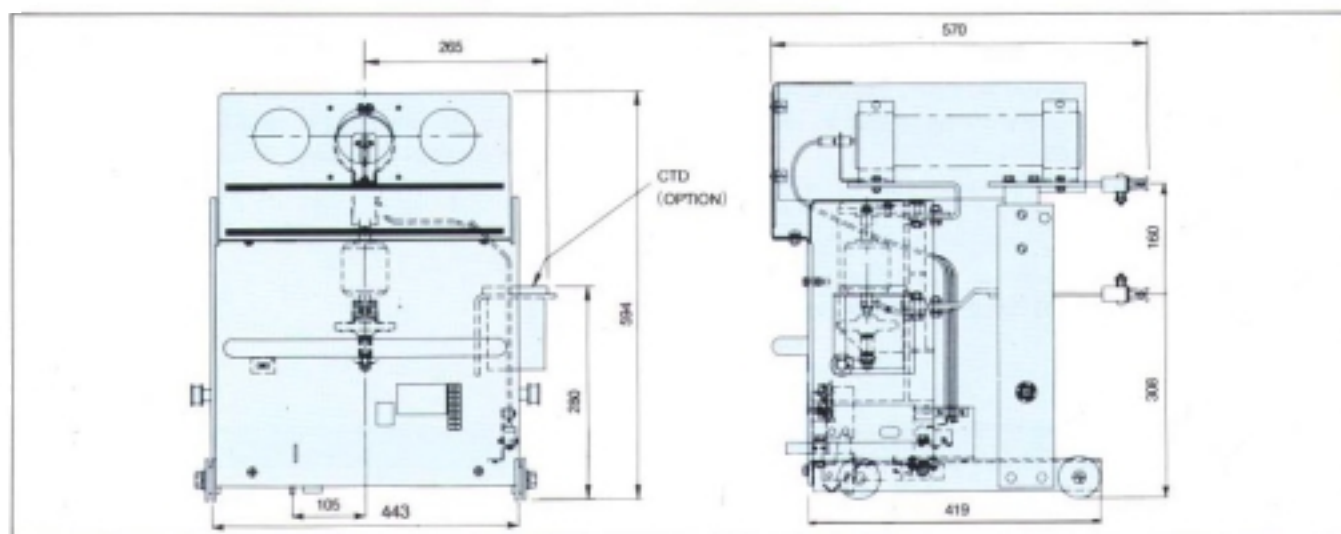


Fig 7. LVC-(3/6)-(42/44) (E/L)C Combination switch drawout Type

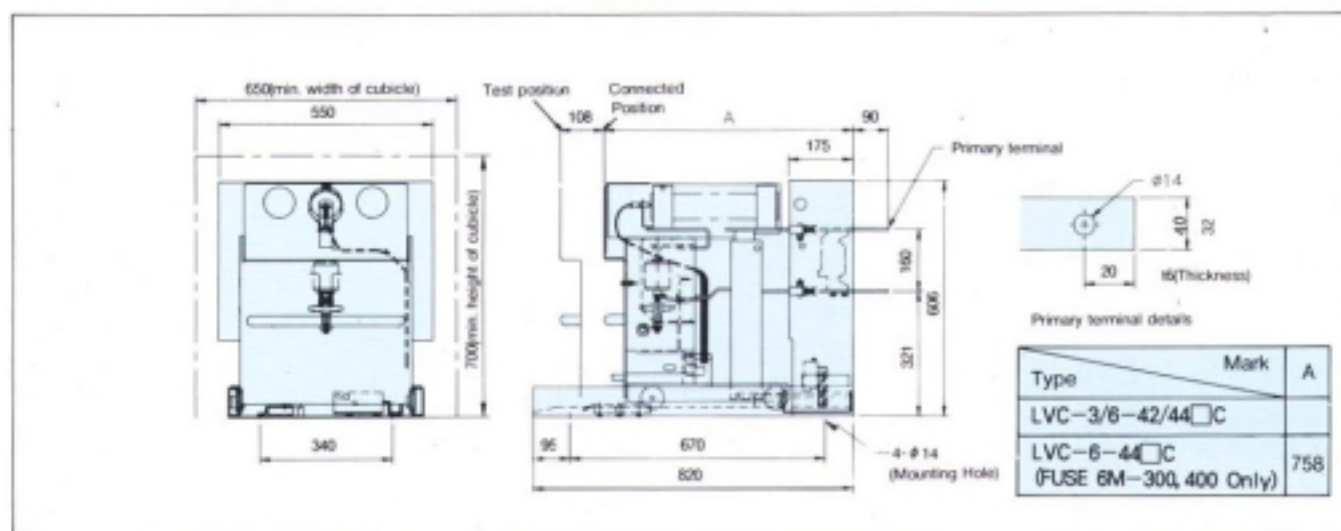


Fig 8. LVC-(3/6)-(42/44) (E/L)C Combination switch drawout Type Class E skeleton frame (in mm)

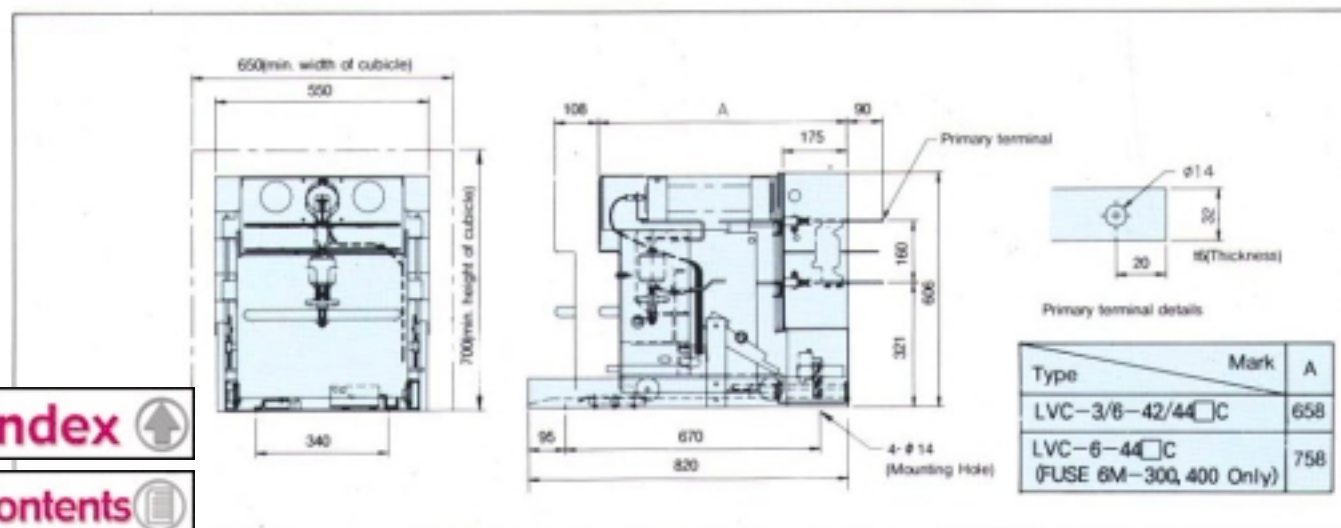


Fig 9. LVC-(3/6)-(42/44) (E/L)C Combination switch drawout Type Class F₂ skeleton frame (in mm)

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VACUUM HOLDING AND ELECTRICAL LIFE TEST

As the LG ceramic vacuum switch tube has an excellent reliability through high production technique and accurate quality control system, no special inspection will be required when desired, however, the following procedures can be applied for checking vacuum holding and electrical life.

1. Vacuum Measurement

Apply commercial frequency voltages (12 kV for the vacuum switch for 3 kV and 6 kV use) between poles of the same phase with open contacts. If there is no breakdown, the vacuum switch holds vacuum satisfactory.

2. Electrical Life Test

The electrical life of the vacuum switch is determined by contact wear whose limit is 1 mm. To judge the electrical life of the vacuum switch a gap between the contact erosion limit line and the guide on the switch is checked. When no gap is found, the switch is to have expired its electrical life.

RATINGS OF APPLIED POWER FUSE

LG types SFL-M and SFL-G power fuse is applied for type G High Voltage Vacuum combination switch. Clip to fasten power fuse for type G is different by type and current rating of power fuse.

Please indicate type and current rating of power fuse in your order.

Table 7. Ratings of applied power fuse

TYPE	Rated Voltage(kV)	Rated current (A)	Fuse diameter(mm)	Specification No
G	3.6	5(T1.5), 10(T3)	50	5
		20(T7.5), 30(T15), 40(T20), 50(T30), 60(T30)		
		75(T50), 100(T75), 150(T100), 200(T150)	60	6
		300(T250), 400(T300)	77	7
	7.2	5(T1.5), 10(T3)	50	5
		20(T7.5), 30(T15), 40(T20), 50(T30), 60(T30)		
		75(T50), 100(T75)	60	6
		150(T100), 200(T150)	77	7
M	3.6	M20, M50, M100	60	6
		M150, M200	77	7
		M300, M400	87	8
	7.2	M20, M50	60	6
		M100, M150, M200	77	7
		M300, M400	87	8

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ORDERING INFORMATION

When Ordering, quote the specification code as shown in Table 8.

Table 8.

LVC-□□-□□□□□□□□□□□□												
										Reactor		No.....[0]
												Yes.....[1]
										PT rating		No.....[0]
												3300/110 V 100 VA.....[1]
												6600/110 V 100 VA.....[2]
										No. of PTs		No.....[0]
												1 PT.....[1]
												2 PT.....[2]
										Power fuse		No.....[0]
												Yes.....[1] Refer to the Table 7
										Power-fuse-melting detector contacts		No.....[0]
												Yes.....[1]
										Skeleton		Class E.....[0]
												Class F ₂[1]
										Operation system		Continuously energized.....[0]
												Instantaneously energized Without CTD.....[1]
												With CTD.....[2]
										Rated current		200 A.....[0]
												400 A.....[1]
										Operation voltage		DC 110 V.....[1]
												AC 110 V.....[2]
												AC 220 V.....[3]
												Option DC125 V.....[4]
										Installation method		Fixed.....[0]
												Drawout type.....[1]
												Combination Switch drawout type.....[2]
										Rated voltage		3.3 kV.....[0]
												6.6 kV.....[1]
LG HIGH VOLTAGE VACUUM CONTACTOR												



LG constantly endeavors to improve
our products, so that information in
this catalog is subject to change
without notice.



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